Remarks

This Amendment is being filed in response to the Official Action mailed in this application on April 19, 2004. A request for an extension of time is also enclosed. Reconsideration of this application is respectfully requested.

Claims 1 and 13-16 were rejected under 35 USC §112, 1st paragraph, as allegedly lacking enablement. Applicant traverses this rejection.

The rejection essentially asserts that "[t]he claims read on gene therapy *in vivo*", and since gene therapy was unpredictable at the time of the invention, the claims lack enablement. However, the claims are not directed to gene therapy *per se*. Rather, the claims are directed to transforming a cell. There is nothing in the rejection to say that *transforming a cell* is unpredictable. In fact, the rejection admits that "progress has been made" in many respects. Accordingly, it is submitted that this rejection is not directed to the claims as written and should therefore be withdrawn.

Moreover, although the issue presented in the rejection is whether the applicant has enabled the invention, the basis of the rejection is an assertion that the application fails to demonstrate that the invention works. Thus, the 35 U.S.C. § 112 rejection is simply a rejection under 35 U.S.C. § 101 in the guise of a rejection under 35 U.S.C. § 112.

The Office asserts that the rejection is for lack of enablement under U.S.C. § 112, first paragraph, and is distinct from a rejection under U.S.C. § 101 asserting inoperability. Specifically, the Office asserts that

> the specification, while being enabling for a method of transforming a cell *in vitro* by applying a nucleic acid to the cell and then adhering a pliable, adhesive fibrin gel to said cell so as to entrap the nucleic acid in the fibrin gel to the cell, does not reasonably provide enablement for a method of transforming a cell *in vivo* by applying a nucleic acid to the cell and then adhering a pliable, adhesive fibrin gel to said cell so as to entrap the nucleic acid in the fibrin gel to the cell and transform said cell. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention commensurate in scope with these claims.

It is also asserted that "[T]he specification fails to provide adequate guidance **and evidence** for transforming a cell *in vivo* by applying a nucleic acid, such as a vector or a virus carrying the nucleic acid, to the cell first and then applying a pliable, adhesive fibrin gel to said cell so as to transform the cell *in vivo* at any location of any subject. No teachings are present within the

specification in regard to how to transform cells in a subject with any nucleic acid in any vector to any virus containing said nucleic acid by the claimed method steps."

Further, it is asserted in the rejection that "[t]he specification fails to provide adequate guidance and evidence for how to administer a pliable, adhesive fibrin gel to a cell having administered nucleic acid in a subject **such that target cells in said subject are transformed with said nucleic acid**."

That the nature of the rejection focuses on the text presented above in added **bold** is clear from the text presented above in added underline. That is, the text in added underline acknowledges that the description of how to make the transforming composition is indeed in the application, that transforming nucleic acids are well-known, and that transforming a cell *in vitro* is enabled. Further, in previous rejections, it was acknowledged that transforming a cell *in vivo* is enabled when done with certain equipment. Implicit in these acknowledgements is that those of ordinary skill who have undertaken many transformations know how to measure for such transformation, and even have been enabled if they use a stent or balloon catheter. Yet, what is emphasized in **bold** is the Office's assertion regarding the specification's teachings relative to how the nucleic acid entrapped in fibrin gel can be taken up by cells.

Because the subject rejection is for want of utility, it is incumbent on the Office to present sufficient reason to doubt applicant's assertion of utility. One way to seek to conform to the legal requirements for such a rejection would be to follow the Office's own internal guidelines--the Utility Examination Guidelines. While the burden on the Office to justify an assertion of want of a credible utility would appear more relaxed in the guidelines than in the precedent of the Court of Appeals for the Federal Circuit, even this low hurdle was not met in the subject rejection.

The Office's Utility Examination Guidelines require:

> Any rejection based on lack of utility should include a detailed explanation why the claimed invention has no specific and substantial credible utility. Whenever possible, the Examiner should provide documentary evidence (e.g., scientific or technical journals, excerpts from treatises or books, or U.S. or foreign patents) to support the factual basis for the prima facie showing of no specific and substantial credible utility. If documentary evidence is not available, the Examiner should specifically explain the scientific basis for his or her factual conclusions.

(Guidelines at §B.3.). Applicant submits that the rejection does not specifically explain a scientific basis to doubt the asserted utility. To the contrary, in making the subject rejection, the Office turns the burden, which the Office's own rules specifically places on itself, onto the applicant, requiring proofs, even though a previous rejection admitted that transforming a cell *in vivo* is enabled when

done with a stent or balloon catheter, and this rejection admits that transforming a cell *in vitro* is enabled. For instance, the Office essentially asks the applicant to explain how the nucleic acid entrapped in fibrin gel can be taken up by cells. Applicant respectfully notes that even the most skilled in the art can offer no more than informed speculation on the mechanism of transformation. Such is not a requirement of the patent law. That is, the patent law does not require an applicant to understand the theory of operation for his or her invention. Moreover, there is no requirement that an applicant show every possible way there is to perform his invention.

Apparently implicit in the Office's assertion is a belief that the nature of a fibrin gel would somehow disable transformation. That *belief* is not shared by applicant. Moreover, the Office's guidelines require that the Office explain any reasoning behind this belief so that the applicant has a real opportunity to respond.

> Further, according to the Guidelines, the Office's showing must contain the following:
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> (1) An explanation that clearly sets forth the reasoning used in concluding that the asserted specific and substantial utility is not credible;
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> (2) Support for factual findings relied upon in reaching this conclusion; and
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> (3) An evaluation of all relevant evidence of record, including utilities taught in the closest prior art.

(Guidelines at §B.3.(b).). In other words, the Office must tell the applicant, in factually supported detail, why it believes that entrapping nucleic acid in fibrin will interfere with the transformation process. The Office's showing must, moreover, establish not that the Examiner believes that fibrin polymer interferes, but that "it is more likely than not that a person skilled in the art would not consider credible any specific and substantial utility asserted by the applicant for the claimed invention." Guidelines at §B.3.(b).

Accordingly, the subject rejection does not meet even the minimal requirements of the Utility Guidelines.

The Court of Appeals for the federal Circuit has reiterated that:

> [A] specification disclosure which contains a teaching of the manner and process of making and using the invention in terms which correspond in scope to those used in describing and defining the subject matter sought to be patented *must* be taken as in compliance with the enabling requirement of Section 112 unless there is reason to doubt the objective truth of the statements contained therein which must be relied on for enabling support.

Brana, at 1565, 34 USPQ2d at 1441 (quoting Marzocchi, at 223, 169 USQ at 369). It is:

> *Only* after the PTO provides *evidence* showing that one of ordinary skill in the art would reasonably *doubt* the asserted utility does the burden shift to the applicant to provide rebuttal evidence sufficient to convince such a person of the invention's asserted utility.

Brana, at 1565, 34 USPQ2d at 1441.

Thus, the Office must accept the applicant's assertion of the usefulness of the invention *unless* it provides evidence showing that one of ordinary skill in the art would reasonably doubt the asserted utility, not mere speculation that an invention might not work.

For the reasons set forth herein, it is urged that the rejection of claims 1 and 13-16 should be withdrawn. Allowance of this application with claims 1 and 13-16 is in order. Such action is earnestly solicited.

Respectfully submitted,

Bristol-Myers Squibb Company
Patent Department
100 Headquarters Park Drive
Skillman, NJ 08558
(908) 904-2372

John M. Kilcoyne
John M. Kilcoyne
Attorney for Applicant
Reg. No. 33,100

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